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Sounds: Power tools

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Peter Illsley: My name is Peter Illsley. I'm the Rover Integration Lead for MSL during the

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Assembly, Test and Launch phase, or "ATLO."

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The tests we're doing now are actually helping us learn how to drive the arm, from both the operator's

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side as well as the flight software side, helping us develop that rover hand-eye coordination.

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Let's say we wanted to go drill a rock. The way we do that as humans is, actually, we use our

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depth perception and we look at that rock in space, and we say, "Oh, we think it's about so far away."

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Well, that judgment has come through our human experience as we've learned exactly, you know,

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how far away our arms are from things. The rover needs to do the same thing. But right now, it's not

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very good at predicting that.

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It certainly is one of the most complicated things we do with the rover, simply because of the number of

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degrees of freedom of the arm, the number of motions the arm can make.

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The arm can actually collide with the rover. The arm can actually hurt the rover, if we're not careful.

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Just like you can poke yourself in the eye, we can do the same with the rover. So we have to teach it

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not to do that by defining a space it keeps out of.

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In the next test sequence we're going to actually life the rover onto a tilt table and tilt it up to 20 degrees.

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And that's where we'll actually simulate being on a crater wall or a large slope or a large obstacle,

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so that we'll understand how that change in gravity vector will actually affect that same set of

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arm motions.

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I actually think that this is one of the most rewarding times in the build process. This is really where you

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get to see all of those neat firsts of the rover, you know: the first drive, the first motions of the arm

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with the flight systems software and with the rest of the flight system hooked up to it.

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And seeing that successfully work is incredibly rewarding.

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I'm Peter Illsley, and this has been your "Building Curiosity" update.